

REASONS FOR EXTRACTION OF PERMANENT TEETH IN A NIGERIAN POPULATION SAMPLE

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ABSTRACT

With the growth in dental practice in Nigeria has arisen the urgent need to establish base line statistics on the pattern of dental diseases and management; which can also be used to identify the dental needs of our people in order to provide basis for reasonable planning. We have relied for too long on foreign statistics in most of our practice and this is not good enough. We should offer also for correlation our own experiences.

This study was carried out to investigate the reasons for extraction of permanent teeth in Nigeria. The records of two hundred and ninety three patients who had a total of 517 permanent teeth extracted within a period of six months in the Dental Clinic of Delta Steel Company Ltd. (DSC), Ovwian-Aladja, Delta State, and the recorded reasons were reviewed. One hundred and forty two patients (48.5%) were males and one hundred and fifty one (51.5%) were females. Caries and its sequelae accounted for over half of all extractions 286(55.3%) and periodontitis was next

with 140 (27.1%) and became more frequently responsible of extractions in patients over 40 years. The teeth most frequently extracted due to caries and its sequelae were lower first molars 48(16.8%), whereas upper second molars were most commonly removed due to periodontitis 14(10%).

Key words: Reasons, Extraction, Permanent teeth, Nigerian population.

INTRODUCTION

Marked increases in dental diseases have accompanied a shift in our diet from traditional foods to refined foods in the name of modernization.

It was established (Ainamo *et al*, 1981) that the commonest reason for extraction in every age group in Finland was caries (or its sequelae, including failed restorations). Periodontitis was next most frequent reason. It was again showed (Cahen *et al*, 1984) that caries was overall the most frequent reason for extraction in France followed by periodontal disease. However for patients over 50 years, periodontitis became the principal reason. These two findings showed that each population has its own characteristic pattern of dental diseases. What are the reasons for dental extraction in Nigeria? This is the question this study is out to answer.

A random sample, without ethnic, religious and socio-economic bias was investigated. DSC is cosmopolitan being a Federal Government Parastatal with a work force from all the major and minor ethnic groupings in the country in accordance with the Federal Character Policy. Types of teeth extracted and the effects of the patients' age and sex were also examined. The number of patients over 60 years that received extractions in this clinic was very small, because the retirement age in DSC is 60 and was therefore ignored.

MATERIALS AND METHOD

Case records of 293 patients who received extractions between February and July 2006 in the Dental Clinic of Delta Steel Company Ltd; Ovwian-Aladja were retrieved from the Medical Records Unit. Data obtained from each patient's record included sex, types of teeth extracted, age at extraction and the reasons. The total number of extractions added up to 517.

RESULTS

The number of teeth extracted per patient averaged 1.77. Table 1 shows that caries and periodontitis were the principal reasons for extractions; other reasons accounted for the loss of relatively few teeth. Few extractions of permanent teeth 7(1.35%) were carried out for children less than 10 years, whereas the age group 21-30 years accounted for the highest 124(24%) as shown in Table 2.

From Fig.2, caries accounted for 74 extractions (74.8%) in 11-20 years old. For adults in the age groups 21-30 years 85 (68.5%); and 31-40 years 64 (65.3%). The next most common reason for extraction for patients aged 21-30 years was eruption problems accounting for 21 teeth removed (16.9%), whereas amongst 31-40 year olds, 20 extractions (20.4%) were carried out due to periodontitis. Periodontitis was given as the primary reason for just 3 extractions amongst patients younger than 31 years.

Amongst 41-50 years olds, caries remained the commonest reason for extractions 55 (54.5%), and periodontitis accounted for 36 extractions (35.6%) in this group. In the 51-60 year old group, 43 extractions (48.9%) were performed due to caries and 42 (47.7) for periodontitis.

Fig. 1 shows the different tooth types extracted in the upper and lower jaws. Anterior teeth were extracted less frequently than posterior teeth. The differences in numbers and types of teeth extracted from upper and lower jaws were small. The first molars were overall the most extracted 98(19%) followed closely by the first premolars 72(13.9%). Of the 31 teeth removed due to eruption problems 20(64.5%) were third molars, mostly lower third molars. The two predominant reasons for extraction, caries and periodontitis were examined in more detail in Table 3.

Table 1: Numbers of extractions / reasons

Sex	All reasons	Caries	Perio	Eruption problems	Trauma	Ortho
Male	256	132	74	8	27	5
Female	61	154	66	13	21	7
Total	517	286	140	31	48	12
Percentage		(55.3%)	(27.1%)	(6%)	(9.3%)	(2.3%)

Table 2: Numbers of extractions per age group

Age Group	Number of Extraction
0 – 10	7
11 – 20	99
21 – 30	124
31 – 40	98
41 – 50	101
51 – 60	88
Total	517

DISCUSSION

Extractions recorded under caries included root remnants. Those extracted due to periodontitis included loose teeth and teeth with grossly exposed roots. Eruption problems included partially and fully impacted teeth.

Under trauma were included fractured and or necrosed teeth due to falls, contact sports and fights. Also included here were those due to domestic and industrial accidents, road traffic accidents (most of them from commercial motorbikes); masticatory accidents from bones and stones. Teeth of older people tend to be more brittle. Trauma T.

from opening of bottled drinks and self-inflicted artificial diastema by patients who crack the mesial or mesio-angular surfaces of their upper central incisors to create “open teeth” were also recorded.

Table 3: Tooth types extracted due to caries and periodontitis

Tooth	Extractions due to caries	Extractions due to Periodontitis
$\frac{1 1}{1 1}$	12	10
$\frac{2 2}{2 2}$	6	12
$\frac{3 3}{3 3}$	12	8
$\frac{4 4}{4 4}$	8	12
$\frac{5 5}{5 5}$	12	8
$\frac{6 6}{6 6}$	8	11
$\frac{7 7}{7 7}$	20	8
$\frac{8 8}{8 8}$	12	9
$\frac{9 9}{9 9}$	17	7
$\frac{10 10}{10 10}$	15	8
$\frac{11 11}{11 11}$	36	7
$\frac{12 12}{12 12}$	48	4
$\frac{13 13}{13 13}$	22	14
$\frac{14 14}{14 14}$	25	7
$\frac{15 15}{15 15}$	18	8
$\frac{16 16}{16 16}$	15	7
Total	286	140

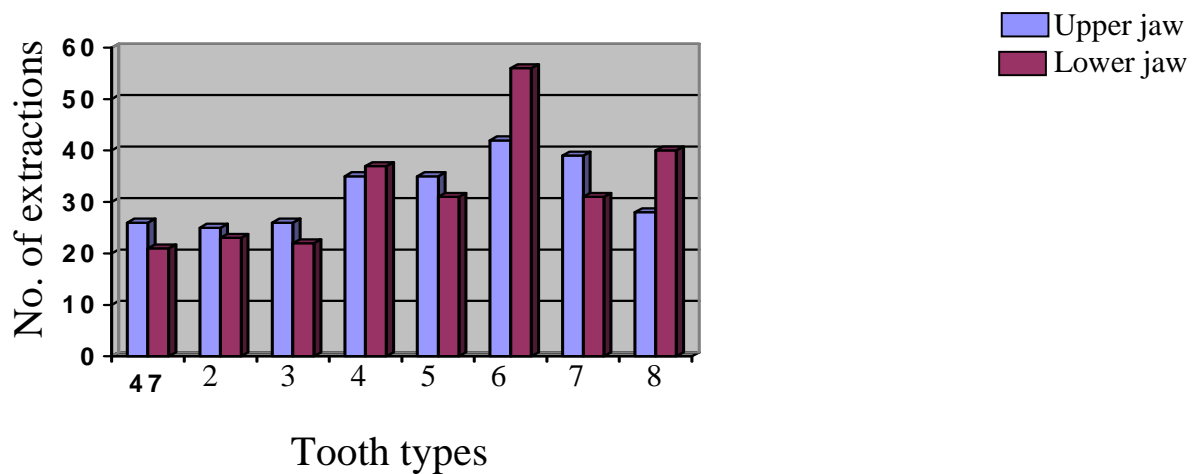


Fig. 1 Tooth types extracted in upper / lower jaws

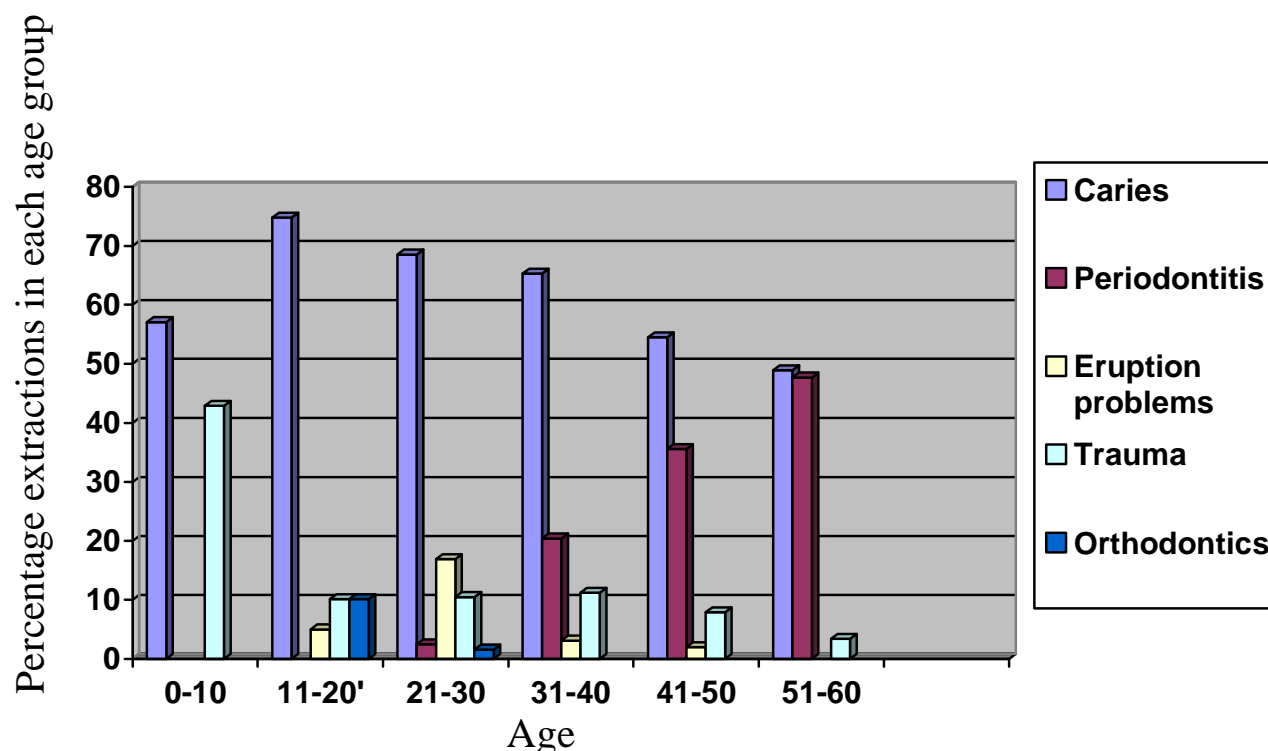


Fig. 2 Principal reasons for extraction by age group

Reasons for extractions due to orthodontics included crowded teeth especially anteriors, and also supernumeraries.

The present study confirmed other reports that the most frequent reasons for extractions are caries and periodontitis (Pelton *et al* 1954, Todd *et al* 1978, Morite *et al* 1994). Caries was the most common reason in this study in every age group (Fig. 2). The tooth type most commonly extracted due to caries was the lower first molar. The tooth types least frequently extracted due to caries was the lower central incisors, lower lateral incisors and lower canines(Kay *et al* 1987, Tan *et al* 1997, Hull *et al* 1997). Fourteen upper second molars were removed due to periodontitis, and this was the commonest tooth type extracted for this reason. Lower central and lateral incisors were the next most frequent tooth types to be extracted due to periodontitis, followed by the lower canines (Table 3).

Lower molars, particularly first molars were the least to be removed as a result of periodontitis because they were probably lost to caries already. On the other hand, lower anterior teeth were the most frequently extracted due to periodontitis because they are least susceptible to caries and are retained longer in the mouth and subjected accordingly to periodontal breakdown later in life (Todd *et al* 1978, Ainamo *et al* 1984, Hull *et al* 1997).The loss of teeth due to periodontitis could be a continuous affair in mouths with very poor oral hygiene and as a person ages (Hischfeld *et al* 1978, Klock *et al* 1991).

Comparison between this study and the ones done in America (Pelton *et al* 1954), Canada (Murray *et al* 1997, Stephens *et al* 1991), some Asian (Morite *et al* 1994, Ong *et al* 1996) and European countries (Klock *et al* 1991, Angelillo *et al* 1996, Reich *et al* 1993) showed on the average higher numbers of extraction due to caries here in Nigeria because our patients do not present in good time for conservation. They come only when in severe pains and

too late except for extraction of the offending teeth. And this is largely due to the poor perception of the need to visit the dentist regularly in addition to fear, for early diagnosis and management. Females investigated for extraction were 151, more than half the total number. They also had more extractions due to caries (Table 1), may be because they consume more fermentable sugars in sweets, sweetened biscuits, drinks and ice cream.

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